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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,790	10/16/2003	Ferencz Denes	032026-0707	9651

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EXAMINER

BISSETT, MELANIE D

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 04/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/686,790	Applicant(s) DENES ET AL.	
	Examiner Melanie D. Bissett	Art Unit 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-17 is/are allowed.
- 6) ☒ Claim(s) 18-31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/03</u> . | 6) <input type="checkbox"/> Other: ____ |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 18-19, 21, 23-26, and 29-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Baker et al.

3. Baker discloses methods of forming high molecular weight, highly crosslinked hydrocarbons and the carbon films produced therefrom (col. 1 lines 16-19; col. 10 lines 5-16). The methods may include forming a carbon film on a surface, thereby modifying the surface of the substrate (col. 6 lines 79-82). Resulting carbon films contain at least 99% carbon, thus containing less than 1% of hydrogen, fluorine, or oxygen (col. 9 lines 15-22). Because the product's surface would have the same structure as that claimed by the applicant, it is the examiner's position that the films would inherently possess the applicant's claimed hardness and friction properties.

4. Claims 18-25, and 27-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Selifanov et al.

5. Selifanov discloses an abrasive material comprising an abrasive layer and a flexible plastic carrier layer, where the abrasive material contains a superhard diamond-like substance having not more than 0.1% hydrogen and oxygen (abstract). Because the reference teaches the adhesion of the abrasive material by chemical or physical

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bonds, it is the examiner's position that the reference suggests that the surface film is integrated into the polymeric substrate. The reference teaches that high portions of sp^3 bonds are preferred (col. 6 lines 21-63), indicating a crosslinked carbon structure.

Surface irregularities have heights of 0.02-2.0 μm , indicating layer thicknesses of about the same values. Plastic carriers include polyethylene, polycarbonate, and polyacrylate (col. 8 lines 24-33). Examples show abrasive materials having around 99% of carbon.

The reference teaches hardness values; however, it appears that the values were obtained in a manner different from those of the applicant. Regardless, because the product's surface would have the same structure as that claimed by the applicant, it is the examiner's position that the films would inherently possess the applicant's claimed hardness properties.

6. Claims 18-19, 22-27, 29, and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by David et al.

7. David discloses inorganic phosphor particles having a diamond-like carbon coating thereon (abstract). The coating comprises about 50-90 atomic % carbon and about 10-50 atomic % hydrogen with about 50-90% tetrahedral bonds, indicating a crosslinked carbon structure (col. 2 lines 18-24). The coating thickness ranges from 1-1000 nm (0.001-1 μm) (col. 3 lines 13-15), and the coatings have extreme hardness and low coefficients of friction (col. 3 lines 57-64). Preferably, the particles have been pre-coated with a transparent material, including polymethyl methacrylate (col. 5 lines 31-40). Because the product's surface would have the same structure as that claimed by

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the applicant, it is the examiner's position that the films would inherently possess the applicant's claimed hardness and friction properties.

Allowable Subject Matter

8. Claims 1-17 are allowed.

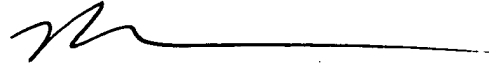
9. The closest prior art, the Cruz-Barba reference (from applicant's Form PTO-1449), discloses methods of treating a polymeric surface with a plasma comprising one or more SF_x species. However, the reference does not teach converting the fluorinated surfaces to contain at least 90% carbon. It is the examiner's position that this step provides a novel and unobvious step over the prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie D. Bissett whose telephone number is (571) 272-1068. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Melanie D. Bissett
Patent Examiner
Art Unit 1711

mdb